

OIL ANALYSIS REPORT

Sample Rating Trend



FREIGHTLINER 677309 Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (44 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

ug2017 Feb2019 Jun2020 Aug2020 Aug2020 Jul2022 Feb2023						
SAMPLE INFORM	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		PCA0101336	PCA0092349	PCA0083512
Sample Date		Client Info		26 Jun 2023	27 Feb 2023	08 Nov 2022
Machine Age	mls	Client Info		386571	367338	354024
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history 1	history 2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>200	48	30	12
Chromium	ppm	ASTM D5185m	>6	3	2	<1
Nickel	ppm	ASTM D5185m	>3	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	2
Aluminum	ppm	ASTM D5185m	>50	24	19	8
Lead	ppm	ASTM D5185m	>10	0	0	0
Copper	ppm	ASTM D5185m	>50	15	11	6
Tin	ppm	ASTM D5185m	>6	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
		ام م مالد م می			la la tama d	history 2
ADDITIVES		method	limit/base	current	history 1	TIIStory 2
Boron	ppm	ASTM D5185m	2	5	15	22
	ppm ppm					
Boron		ASTM D5185m	2	5	15	22
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	5 0	15 0	22 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	5 0 75	15 0 73	22 0 75
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	5 0 75 1	15 0 73 <1	22 0 75 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	5 0 75 1 908	15 0 73 <1 919	22 0 75 <1 858
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	5 0 75 1 908 1148	15 0 73 <1 919 1142	22 0 75 <1 858 1128
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	5 0 75 1 908 1148 940	15 0 73 <1 919 1142 1002	22 0 75 <1 858 1128 987
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	5 0 75 1 908 1148 940 1152	15 0 73 <1 919 1142 1002 1204	22 0 75 <1 858 1128 987 1182
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	5 0 75 1 908 1148 940 1152 2380	15 0 73 <1 919 1142 1002 1204 3528	22 0 75 <1 858 1128 987 1182 3538
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	5 0 75 1 908 1148 940 1152 2380 current	15 0 73 <1 919 1142 1002 1204 3528 history 1	22 0 75 <1 858 1128 987 1182 3538 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	5 0 75 1 908 1148 940 1152 2380 current 9	15 0 73 <1 919 1142 1002 1204 3528 history 1 7	22 0 75 <1 858 1128 987 1182 3538 history 2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base	5 0 75 1 908 1148 940 1152 2380 current 9 5 14	15 0 73 <1 919 1142 1002 1204 3528 history 1 7 5	22 0 75 <1 858 1128 987 1182 3538 history 2 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >50	5 0 75 1 908 1148 940 1152 2380 <u>current</u> 9 5 14	15 0 73 <1 919 1142 1002 1204 3528 history 1 7 5 13	22 0 75 <1 858 1128 987 1182 3538 history 2 3 2 11
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >20 limit/base	5 0 75 1 908 1148 940 1152 2380 current 9 5 14 Current	15 0 73 <1 919 1142 1002 1204 3528 history 1 7 5 13 13 history 1	22 0 75 <1 858 1128 987 1182 3538 history 2 3 2 11 11 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >50 >20 limit/base >3	5 0 75 1 908 1148 940 1152 2380 <u>current</u> 9 5 14 <u>current</u> 1	15 0 73 <1 919 1142 1002 1204 3528 history 1 7 5 13 13 history 1 0.5	22 0 75 <1 858 1128 987 1182 3538 history 2 3 2 11 11 history 2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >50 >20 <i>limit/base</i> >3 >20	5 0 75 1 908 1148 940 1152 2380 <u>current</u> 9 5 14 <u>current</u> 1 1 10.0 22.2	15 0 73 <1 919 1142 1002 1204 3528 history 1 7 5 13 history 1 0.5 7.7	22 0 75 <1 858 1128 987 1182 3538 history 2 3 2 11 1 history 2 0.3 6.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 0 50 0 950 1050 995 1180 2600 imit/base >50 20 20 imit/base >3 >20 >30	5 0 75 1 908 1148 940 1152 2380 <u>current</u> 9 5 14 <u>current</u> 1 1 10.0 22.2	15 0 73 <1 919 1142 1002 1204 3528 history 1 7 5 13 history 1 0.5 7.7 19.0	22 0 75 <1 858 1128 987 1182 3538 history 2 3 2 11 11 history 2 0.3 6.1 19.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	2 0 0 50 0 950 1050 995 1180 2600 imit/base >50 20 20 imit/base >3 >20 >30	5 0 75 1 908 1148 940 1152 2380 Current 9 5 14 Current 1 10.0 22.2 Current	15 0 73 <1 919 1142 1002 1204 3528 history 1 7 5 13 history 1 0.5 7.7 19.0 history 1	22 0 75 <1 858 1128 987 1182 3538 history 2 3 2 11 history 2 0.3 6.1 19.1 history 2



Abnorm

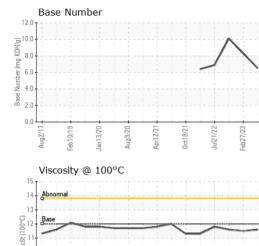
Aug2/17

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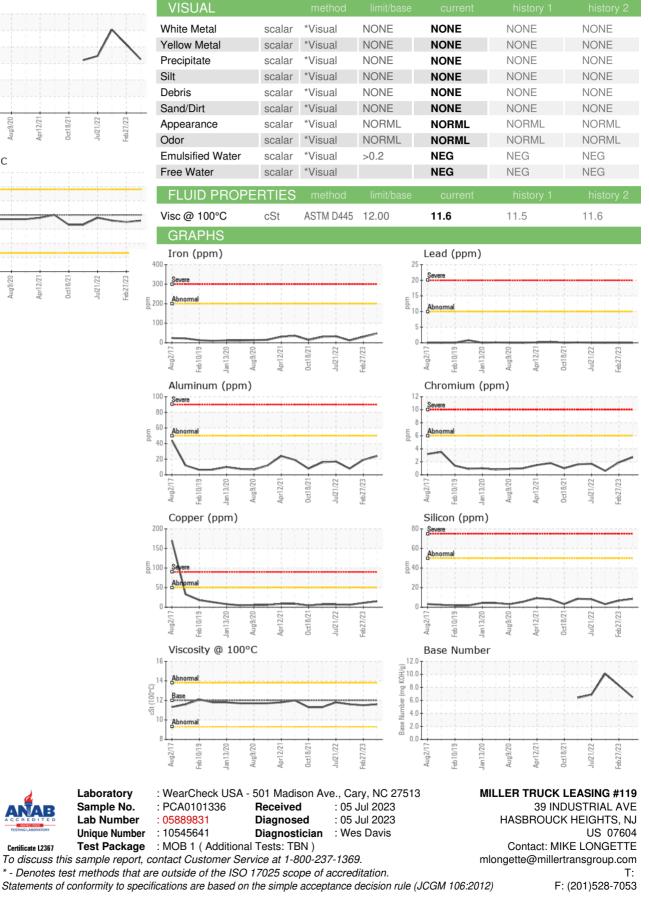
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OIL ANALYSIS REPORT



Jul21/22

Feb27/23



Certificate L2367

Laboratory

Sample No.

Lab Number

Contact/Location: MIKE LONGETTE - MILRUT